



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,664	07/26/2006	Timothy Roberts	64323(50024)	4010
21874	7590	12/02/2008	EXAMINER	
EDWARDS ANGELL PALMER & DODGE LLP			CHAWAN, SHEELA C	
P.O. BOX 55874			ART UNIT	PAPER NUMBER
BOSTON, MA 02205			2624	
			MAIL DATE	DELIVERY MODE
			12/02/2008	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/553,664	ROBERTS ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	SHEELA C. CHAWAN	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 17 October 2005.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-30, 32, 34, 35, 37 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-9, 14- 26, 32, 34-35, 37 is/are rejected.  
 7) Claim(s) 10- 13, 27- 30 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 17 October 2005 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date 9/01/06.

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.  
 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_.

***DETAILED ACTION***

***Preliminary Amendment***

1. Preliminary amendment filed on 10/17/05 has been entered.  
Claims 31, 33 and 36 are cancel.  
Claims 1-30, 32, 34-35 and 37 are pending in the application.

***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Information Disclosure Statement***

3. The information disclosure statement (IDS) submitted on 9/01/06, the information disclosure statement has been considered by the examiner.

***Drawings***

4. The Examiner has approved drawings filed on 10/17/05.

***Claim Rejections - 35 USC § 101***

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-15, 34-35, are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to

another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing (See the May 15, 2008 memorandum issued by Deputy Commissioner for Patent Examining Policy, John J. Love, titled "Clarification of 'Processes' under 35 U.S.C. 101"- publicly available on the PTO website [http://www.uspto.gov/web/offices/pac/dapp/lopallpreo/notice1,section\\_101\\_05\\_15\\_2008.pdf](http://www.uspto.gov/web/offices/pac/dapp/lopallpreo/notice1,section_101_05_15_2008.pdf), "memorandum to examining corp"). The instant claims neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. In order for a process to be "tied" to another statutory category, the structure of another statutory category should be positively recited in a step or steps significant to the basic inventive concept, and NOT just in association with statements of intended use or purpose, insignificant pre or post solution activity, or implicitly.

### ***Claim Rejections - 35 USC § 101***

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 34-35, are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 34 defines A computer program ... ). However, the claim does not define "A computer-readable medium having stored program instructions ..." and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it

becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" - Guidelines Annex IV). That is, the scope of the presently claimed can range from paper on which the program is written, to a program simply contemplated and memorized by a person. The examiner suggests amending the claim to embody the program on "a computer-readable medium having stored program instructions ..." or equivalent in order to make the claim statutory. Any amendment to the claim should be commensurate with its corresponding disclosure.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1- 9, 14 - 25, 32, 37, are rejected under 35 U.S.C. 102(b) as being anticipated by Ioffe, et al., "Human tracking with mixtures of trees" CONFERENCE PROCEEDINGS ARTICLE, vol. 1, July 7, 2001, pp. 690-695, XP010554049, Listed in IDS filed on 9/1/06.

As to claim 1, Ioffe discloses a method of identifying an object or structured parts of an object in an image (abstract), the method comprising the steps of:

creating a set of templates, the set containing a template for each of a number of predetermined object parts and applying said template to an area of interest in an image

where it is hypothesised that an object part is present (section 2, modeling with trees , 6.1 detecting body parts);

analysing image pixels in the area of interest to determine the probability that it contains the object part (section 2, modeling with trees);

applying other templates from the set of templates to other areas of interest in the image to determine the probability that said area of interest belongs to a corresponding object part and arranging the templates in a configuration ( section 2, modeling with trees 6.1, detecting body parts);

calculating the likelihood that the configuration represents an object or structured parts of an object (section 1, introduction, 2, modeling with trees); and

calculating other configurations and comparing said configurations to determine the configuration that is most likely to represent an object or structured part of an object (section 1, introduction, 2, modeling with trees).

As to claims 2 and 20, Ioffe discloses a method as claimed in Claim 1 wherein, the probability that an area of interest contains an object part is calculated by calculating a transformation from the coordinates of a pixel in the area of interest to the template (section 6.1. Detecting body parts).

As to claims 3 and 19, Ioffe discloses a method as claimed in Claim 1 wherein, analysing the area of interest further comprises identifying the dissimilarity between foreground and background of a transformed probabilistic region (section 6.1. Detecting body parts) .

As to claims 4 and 21, Ioffe discloses a method as claimed in Claim 1 wherein, analysing the area of interest further comprises calculating a likelihood ratio based on a determination of the dissimilarity between foreground and background features of a transformed template (section 6.1. Detecting body parts).

As to claims 5 and 22, Ioffe discloses a method as claimed in Claim 1 wherein, the templates are applied by aligning their centres, orientations in 2D or 3D and scales to the area of interest on the image (section 6.1. Detecting body parts).

As to claims 6 and 23, Ioffe discloses a method as claimed in Claim 1 wherein the template is a probabilistic region mask in which values indicate a probability of finding a pixel corresponding to an object part (section 6.1. Detecting body parts).

As to claims 7 and 24, Ioffe discloses a method as claimed in Claim 1 wherein, the probabilistic region mask is estimated by segmentation of training images (section 6.2, modeling the body).

As to claims 8 and 25, Ioffe discloses a method as claimed in Claim 1 wherein, the image is an unconstrained scene (fig 2, 3, 4).

As to claims 9 and 26, Ioffe discloses a method as claimed in Claim 1 wherein, the step of calculating the likelihood that the configuration represents an object or a structured part of an object comprises calculating a likelihood ratio for each object part and calculating the product of said likelihood ratios (section 3, learning a tree model).

As to claims 14 and 32, Ioffe discloses a method as claimed in Claim 1 wherein the step of comparing said configurations comprises iteratively combining the object parts and predicting larger configurations of body parts (fig 2, 3 and 4).

As to claim 15, Ioffe discloses a method as claimed in Claim 1 wherein the object is a human or animal body (section 1, introduction, 2, modeling with trees).

Regarding claim 16, it is interpreted and thus rejected for the same reasons as applied above in the rejection of claim 1.

As to claim 17, Ioffe discloses a system as claimed in Claim 16 wherein, the system further comprises imaging means capable of providing an image for analysis (section 6, tracking).

As to claim 18, Ioffe discloses a system as claimed in claim 17 wherein the imaging means is a stills camera or a video camera (section 6, tracking).

Regarding claim 37, it is interpreted and thus rejected for the same reasons as applied above in the rejection of claim 1.

### ***Allowable Subject Matter***

8. Claims 10- 13, 27-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

None of the prior art on record teaches or fairly suggests, A method as claimed in Claims 10 and 26 wherein the step of determining the spatial relationship of the object part templates comprises analysing the configuration to identify common boundaries between pairs of object part templates as recited in claims 10 and 26.

Claims 11-13 depend from the objected base claim 10 and therefore they are objected for the same reasons.

Claims 27-30 depend from the objected base claim 26 and therefore they are objected for the same reasons.

***Contact Information***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela C Chawan whose telephone number is 571-272-7446. The examiner can normally be reached on Monday - Thursday 7.30 - 6.00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Werner can be reached on 571-272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

Should you have questions on access to the Private PAIR system, contact the  
Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sheela C Chawan/

11/21/08

Primary Examiner, Art Unit 2624

Application/Control Number: 10/553,664  
Art Unit: 2624

Page 10